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Resin mounted printed circuit board electronic component removal method
from wiring board - using ultraviolet laser to irradiate residual resin
after softening it and removing component to decompose and disperse
remainder

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Number of Countries: 008 Number of Patents: 005

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Main IPC	Week
EP 587305	A2	19940316	EP 93306233	A	19930806	H01L-021/58	199411 B.
JP 6077264	A	19940318	JP 92227015	A	19920826	H01L-021/52	199416
EP 587305	A3	19940330	EP 93306233	A	19930806	H01L-021/58	199521
CN 1085012	A	19940406	CN 93116574	A	19930825	H01L-021/58	199526
US 5423931	A	19950613	US 93109067	A	19930819	H32B-035/00	199529

Priority Applications (No Type Date): JP 92227015 A 19920826

Cited Patents: No-SR.Pub; 3.Jnl.Ref; DE 3744764; EP 51153; FR 2666451; GB 2050906; JP 1225341; JP 61075515; WO 9103835; WO 9118957

Patent Details:

Patent	Kind	Lan	Pg	Filing Notes	Application	Patent
EP 587305	A2	E	19			

Designated States (Regional): CH DE FR GB LI

JP 6077264 A 12

US 5423931 A 17

Abstract (Basic): EP 587305 A

The a component removal method involves applying electromagnetic radiation to the residual resin remaining on the board after removal of the component (1). The radiation has sufficient intensity to decompose and disperse the resin.

The resin (3) is capable of being softened at a temperature of not more than 350 degrees C and the wiring on the board (4) is resistant to temperatures of at least 350 degrees C.

ADVANTAGE - Enables component and resin to be removed from circuit board without using solvent, and without damage to wiring; does not carbonise resin; enables board to be reused.

Dwg.1/10

Abstract (Equivalent): US 5423931 A

After softening of the resin by heat and removal of the component, the method includes a step of removing residual resin remaining on the board at the location of the component by application of ultraviolet laser radiation having an intensity sufficient to decompose and disperse said residual resin. This can be done without damaging the wiring on the board so that the wiring is re-usable to attach a further electronic component at the same location.

Excessive heating of the board can be avoided by measures such as applying a pre-load to the component during softening so that it moves when sufficiently softened, and monitoring the softening.

ADVANTAGE - Removal without using solvent and without carbonising resin, thus enabling board to be re-used.

(Dwg. 3b/10

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Derwent Class: V04

International Patent Class (Main): B12B-035/00; H01L-021/52; H01L-021/58

International Patent Class (Additional): B05D-003/06; B44C-001/22;
H01L-021/50; H05K-011/04